Aquaculture in Utah

Newsletter on Current Trends in Aquaculture

Utah Department of Agriculture and Food . Division of Animal Industry

350 N. Redwood Rd., Box 146500, SLC, UT 84114 (801)538-7029

www.ag.state.ut.us

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The Utah Fish Health Policy Board recently took action to make changes to Utah's Fish Health Rule.

The following items are either additions or changes to the rule:

It is the responsibility of the COR holder to report to their training agency (either the Department or the Division) all escapements of aquatic animals from facilities within 72 hours. (R58-17-7(D))

A quarantine may be imposed when aquatic animals are possessed, transported or transferred in violation of this rule, wildlife rules, or statute and consequently pose a possible disease threat. A quarantine may be imposed when it becomes necessary to protect aquatic animals within the state. (R58-17-10(B))

For international shipments of aquatic animals, a certificate of veterinary inspection from the source must be obtained by the importer. The form must indicate that known nuisance species are not found in the water source. (R58-17-13(A)(4))

To receive initial fish health approval of aquatic animals, inspection reports or other evidence of the disease status of an aquaculture facility or public aquaculture facility must be submitted to the appropriate agency. For warm water aquatic animal approval, the AApplication for Warm Water Species Fish Health Approval@ form must be submitted for initial approval and renewal. (R58-17-15(C))

To qualify for aquatic animal health initial and renewal approval, evidence must be available verifying that any prohibited pathogens listed under R58-1715(D)(2) and (3) are not present. (R58-17-15(C)(1)(a))

The aquatic animals must have been on the facility for at least six months prior to the first inspection. (R58-17-15 (C)(2)(a))

Health inspection reports must be available for review for the approval of existing facilities. (R58-17-15(C)(2) (b))

After initial approval of the commercial fish health facility, annual inspections are required to renew fish health approval. (see R58-17-15(C)(2) (d)).

New Fish Health Specialist

Mark Martin has been hired as a new Fish Health Specialist for the Utah Department of Agriculture and Food. He has a Masters Degree in fisheries from Brigham Young University and a Bachelors Degree in Zoology from Weber State University. His thesis in graduate school was on the electrophoretic analysis of cutthroat trout subspecies in selected Utah waters. He is married to Linda Martin and they have three boys and currently reside in Orem.

FISH HEALTH EMAIL COMMUNICATION LINK

The fish health program with the Utah Department of Agriculture and Food is open to receive fish operators comments and suggestions through email. We highly encourage that private fish operators and owners communicate with the department through email. The email address of Fish Pathologist Kent Hauck is "khauck@state.ut.us" and the email address of fish health specialist Mark Martin is "mmartin@state.ut.us." Please provide us with your email addresses in order for the department to better communicate with you.

Receipt Required for Private Fish Operations

A receipt is required for those patrons who catch and retain fish at private fee fishing facilities. Agriculture (Animal Industry) rule R58-17-18(D) states that a receipt is required from the operator to the customer to transport dead aquatic animals from a fee fishing facility. Fish species are categorized as a dead aquatic animal. The following receipt information is required: (1) Name, address, COR number and expiration date, and phone number of the fee-fishing facility; (2) Date caught; (3) Species and number of fish.

Copies of the provided receipts also need to be kept at the facility. These copies may be checked when fish health specialists conduct onsite investigations of fee fishing facilities.

Help Eliminate The Spread Of Whirling Disease By Practicing Smart Fishing Habits

The Fish Health Policy Board of the State of Utah believes that anglers, boaters and others can help combat whirling disease and preserve wild trout populations by following some of the following simple precautions.

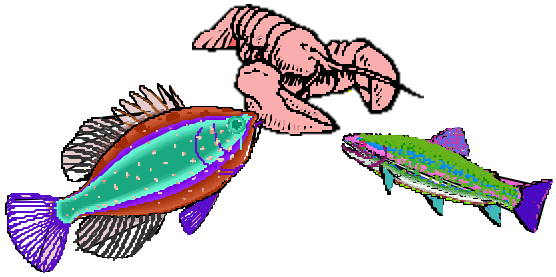
- Never transport live fish from one place to another. In Utah it is against the law, unless permitted by a COR.
- Clean mud and debris from all equipment after use in a lake or streams and again with 15 percent chlorine when you get home, especially if fishing in known whirling disease positive waters.
- Thoroughly wash all mud, debris and vegetation from vehicles, boats, trailers, anchors, axles, waders, boots and all fishing equipment to prevent the spread of whirling disease.
- Drain boats, equipment, coolers, live bait wells, and anything that holds water.
- Dispose of fish entrails and parts properly. To prevent the spread of the disease do not dispose of fish parts in a kitchen disposal. The best method is to dispose of them in a garbage receptacle. Thoroughly burning or burying fish parts in an area distant from public waters is also acceptable.
- Don't use trout, whitefish or salmon parts as cut bait.

Fish health specialists from the Department of Agriculture and Food routinely and thoroughly wash their truck after traveling from one permitted site to another. Sampling equipment is always sanitized with a strong solution of chorine bleach between sites. Given the resistance of whirling disease spores, they may be transferred via vehicular travel from contaminated to uncontaminated areas.

Private fee fishing operators need to be especially cautious about anyone fishing on their premise. Precautions should be taken to ensure that all fishing gear is sanitized and all motorized vehicles are clean and free of mud and debris before entering the property. We recommend that private fee fishing operators provide their own personal fishing equipment to the public for onsite fishing use only, thus preventing their fish from becoming contaminated.

Newly Licensed Facilities

The following is a list of newly licensed aquaculture and fee fishing facilities since our last newsletter. We would like to welcome them into the Fish Health program. The new aquaculture/fee fishing facility is Broken Arrow Trout Farm. New aquaculture facilities include Belmont Hot Springs, East Spring Run and Zeo Aquatic Farms. New fee fishing facilities include the Lynn Broadbent Farm, Carala Cattle Co., Crestwood Growers, The Calvin Duston Farm, Fish 'N' Fun, Heppler Fish Pond, The Clint Kearl Farm, McMurdie Farms, Nearly Paradise, Spring Lake Fly Fishing, Trout Meadow, Wilkinson Family Campground, Gary Young and Woodland Brooks, Karl Dean, Spring Lake Fly Fishing, Red Canyon Lodge, Jay Olsen, Bruce Woods, Robert Johnson, Richard Reinhold, Welby Aagard, and Skip Weeks.



Responsibilities and Roles of the Department of Agriculture and Food and Division of Wildlife

The Department of Agriculture is responsible for the marketing and promotion of the state's aquaculture industry and enforcing laws and rules make by the Wildlife Board governing species of aquatic animals which may be imported into the state or possessed or transported within the state that are applicable to aquaculture or private fee fishing facilities as per aquaculture statute 4-37-104. The department is subject to the policies and rules of the Fish Health Policy Board and shall act to control the spread of disease causing pathogens among aquatic animals in private aquaculture and fee fishing facilities and act to prevent the spread of disease causing pathogens from aquatic animals in, to be deposited in, or harvested from private aquaculture or fee fishing facilities to aquatic wildlife, other animals, and humans.

The Legislature declares that it is in the interest of the people of the state to encourage the practice of aquaculture, while protecting the public fishery resource, in order to augment food production, expand employment, promote economic development, and protect and better utilize the land and water resources of the state as found in 4-47-102(1).

The Legislature also declares that aquaculture should be considered a branch of the agricultural industry of the state for the purposes of any laws that apply to or provide for the advancement, benefit, or protection of the agricultural industry within the state as cited in 4-37-102(2).

The Division of Wildlife Resources is responsible for determining the species of aquatic animals that may be imported into, possessed, and transported within the state as referenced by 4-37-105. The division shall act to prevent the outbreak and act to control the spread of disease causing pathogens among aquatic animals in public aquaculture facilities; and act to prevent the spread of disease causing pathogens from aquatic animals in, to be deposited in or harvested from public aquaculture facilities and private ponds to aquatic wildlife, other animals, and humans.

The department and division work with one another and enter into agreements for mutual cooperation as specified in 4-37-106. The department regulates aquaculture and fee-fishing facilities. An aquaculture facility is any tank, canal, raceway, pond, off-stream reservoir, fish processing plant or other structure used for commercial aquaculture. A fee fishing facility is a body of water used for holding or rearing aquatic animals for the purpose of providing fishing for a fee. All private fish hatcheries in the state are under the jurisdiction of the department. The division regulates public aquaculture facilities (waterways), state hatcheries, private fish ponds, institutional aquaculture facilities, short term fishing events, private stocking of waters and selling of fish and educational fish displays (see R58-17-2). A private fish pond means a body of water where privately owned aquatic animals are propagated or kept. It does not include any aquaculture facility or fee fishing facility. Before a site is approved for fish it must be visited and approved by the department and the division. The department conducts studies on the facility to determine water suitability for fish. Before a species of fish comes from outside the state into Utah, the department must approve it and issue a permit. The division approves the type of species that may be stocked and site suitability.

Fee Fishing Facility Reminder

A reminder that it is the law for the operator to provide a receipt to those who catch and take fish from a fee fishing facility. Aquaculture rule R58-17-18(A) states that a receipt is required to transport dead aquatic animals (fish) away from a fee-fishing facility. The operator must provide a receipt to the customer that contains the following information:

(1) Name, address, COR number and expiration date, and phone number of the fee fishing facility; (2) The date fish were caught and removed from the facility; (3) The species and number of fish taken from the premises; (4) A legible name and signature of the person issuing the receipt.

A duplicate record of the above information should be kept on file by the facility for department review.

WHIRLING DISEASE NEWS AND VIEWS

Whirling disease (WD) has been called the single greatest threat to the existence of wild trout populations in the western United States. Although a cure for the disease has not currently been found, a variety of research actions are being taken and have been taken to help reduce this threat. This article touches upon efforts taken by researchers and fishery biologists alike to find a possible cure for this disease. Information is taken from the most recent Whirling Disease Symposium (February, 1999) held in Missoula, Montana.

Richard Vincent (Montana Whirling Disease Task Force) is studying the temperature effects on whirling disease and trout. He determined that at cold water temperatures (below 50 degrees F.) whirling disease infections in trout are low. As the water warms, infection levels increase, with infections in trout at 54-57 degrees F. As the water temperature increased to the lower 60's infection levels drop off again. Mr. Vincent believes trout fry that emerge at colder water temperatures have a better chance of being exposed to survival levels of WD infection than trout that emerge at 54-57 degrees F. A hypothesis is being tested that the temperature of the water from which fish emerge as fry is the primary factor in determining the temperature at which the fish will spawn as adults. If this is true, then fish managers may have two new options for managing WD. First, they must be able to identify strains of wild rainbow trout that spawn at a colder water temperature whose offspring would be better suited to surviving in an infected WD stream. Second they may be able to shift spawning temperature of wild fish whose fry currently emerge during the peak TAM release (54-57 degrees F) so that they emerge at a colder water temperature. This could be accomplished by raising the eggs of wild trout in an incubator with water temperatures below 50 degrees F. and then releasing the fry back into the wild. If the hypothesis is correct, those fish as adults would then spawn at colder water temperatures, thereby imparting a greater chance of survival for their offspring. The Whirling Disease Foundation, which provides funding for Mr. Vincent, is currently conducting research to determine the validity of this hypothesis.

A recent study was conducted in Bozeman, Montana to determine the age at which young trout become resistant to the development of WD, especially when exposed to different parasitic loads. This research was based on the untested premise that resistance to WD increases directly as a function of ossification of the skeleton. Their work confirmed that the development and severity of WD in rainbow trout is dependent on the age of the fish when first exposed to the TAM stage of *Myxobolus cerebralis* and on the density to which the fish are exposed. This research suggests that the effects of this disease on rainbow trout are greatly reduced when first exposed after nine weeks of age. Researchers hope to investigate in the future if trout size, length and weight are determining factors with regard to whirling disease susceptibility.

A study at the University of California at Davis studied the effects of whirling disease on rainbow and brown trout. Their research showed that under experimental conditions brown trout are significantly more resistant to infections of *Myxobolus cerebralis* when compared to rainbow trout.

The purpose of this research is to understand the mechanisms underlying the genetic means developed to combat the parasite in more resistant trout populations so that they may be utilized through genetic programs to improve the resistance of rainbow trout to whirling disease.

Papers presented on the Madison River have shown a sharp decline in the numbers of rainbow trout while brown trout populations have remained constant since the onset of whirling disease. This study also suggests that brown trout are more tolerant than rainbow trout to whirling disease.

Researchers from UC Davis and Germany have discovered that non-tubifex Oligochaete (dead end) worms can ingest and inactivate a majority of available whirling disease spores in substrate under laboratory conditions. The results obtained from their experiment demonstrate the ability of the non-susceptible strain of tubifed worm to screen and inactivate more than 70 percent of whirling disease spores within an experimental setting. These worms demonstrated the ability to act as a successful benthic competitor to the tubifex worm. Further laboratory studies, in which field conditions are simulated, should be carried out in order to further evaluate the practical use of this technique in the field.

***Whirling Disease News and Views will appear in each newsletter to provide information regarding new WD research and findings.*